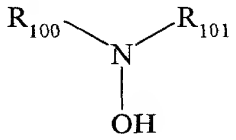
Amendments to the Claims:

Listing of Claims:

1. (Currently Amended) A method for inhibiting the ~~premature polymerization and the~~ polymer growth of living polymer in admixture with ethylenically unsaturated monomers comprising adding to said ~~monomers~~ mixture an effective amount of at least one inhibitor that is a hydrogen donor or electron acceptor.

2. (Original) The method of claim 1 wherein the inhibitor is a hydrogen donor.

3. (Original) The method of claim 2 wherein the inhibitor is of the structure



wherein

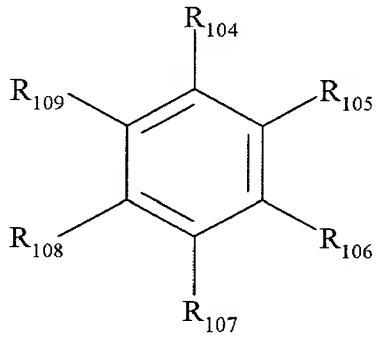
R_{100} and R_{101} are independently selected from the group consisting of hydrogen, alkyl, alkylidene, benzylidene, aryl, benzyl, COR_{102}, $COOR_{102}$, $CONR_{102}R_{103}$, cyclic, heterocyclic, and substituted alkyl or aryl where the substituents are C, O, N, S, or P, or R_{100} and R_{101} can be taken together to form a ring structure of five to seven members; and

R_{102} and R_{103} are independently selected from the group consisting of hydrogen, alkyl, aryl, benzyl, cyclic, heterocyclic, and substituted alkyl or aryl where the substituents are C,

O, N, S, or P, or R_{102} and R_{103} can be taken together to form a ring structure of five to seven members.

4. (Withdrawn)

5. (Original) The method of claim 2 wherein the inhibitor is of the structure



wherein

R_{104}, R_{105}, R_{106}, R_{107}, R_{108}, and R_{109} are independently selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl, heterocyclic, substituted alkyl, substituted aryl, OR_{110}, $NR_{110}R_{111}$, SR_{110}, NO_2, NO, CN, COR_{112}, halogen, and/or any two adjacent groups can be taken together to form ring structure(s) of five to seven members, provided that at least one of R_{104}, R_{105}, R_{106}, R_{107}, R_{108}, and R_{109} is OH or NHR_{110};

R_{110} and R_{111} are independently selected from the group consisting of hydrogen, alkyl, aryl, benzyl, cyclic, heterocyclic, substituted alkyl or aryl where the substituents are C, O,

N, S, or P, and COR_{102}, or R_{110} and R_{111} can be taken together to form a ring structure of five to seven members;

R_{112} is R_{102}, OR_{102}, or $NR_{102}R_{103}$; and

R_{102} and R_{103} are independently selected from the group consisting of hydrogen, alkyl, aryl, benzyl, cyclic, heterocyclic, and substituted alkyl or aryl where the substituents are C, O, N, S, or P, or R_{102} and R_{103} can be taken together to form a ring structure of five to seven members.

6. (Original) The method of claim 5 wherein R_{104} is OH.

7 - 8 (Withdrawn)

9. (Original) The method of claim 6 wherein at least one of R_{105} and R_{107} is NO_2.

10 - 14 (Withdrawn)

15. (Original) The method of claim 2 wherein the inhibitor is selected from the group consisting of diethylhydroxylamine, cyclohexanoneoxime, dibenzylhydroxylamine, 2,4-dinitro-6-sec-butylphenol, N-phenyl-N'-(1,4-dimethylpentyl)-para-phenylenediamine, 2,5-di-t-butylhydroquinone, 2,5-di-t-amylhydroquinone, methylhydroquinone, 4-t-butylhydroquinone, 4-t-butylcatechol, octanethiol, 2,6-di-t-butyl-4-ethylphenol/Cu(I)naphthenate,

dihydroanthracene, N-t-butyl-2-benzothiazole-sulfenamide, and N-methyl-4-nitroaniline.

16. (Original) The method of claim 2 wherein a transition metal is added.

17. (Original) The method of claim 16 wherein the transition metal is copper.

18 - 29 (Withdrawn)

30. (Original) Method of claim 1 wherein said monomers contain impurities from the monomer production and/or purification processes.

31. (Currently Amended) Method of claim ~~30~~ 1 wherein the ~~impurities include~~ mixture comprises polymer formed during the production and/or purification processes.

32. (Original) Method of claim 31 wherein the polymer formed during the production and/or purification processes is soluble in the monomer stream.

33. (Original) Method of claim 31 wherein the polymer formed during the production and/or purification processes is insoluble in the monomer stream.

34. (Original) Method of claim 1 wherein said monomers are undergoing purification by distillation.

35. (Original) Method of claim 34 wherein the distillation process occurs at pressures less than 760 mm Hg.

36. (Original) Method of claim 34 wherein the distillation process is a continuous process.

37. (Original) Method of claim 34 wherein the equipment in which the distillation process occurs contains polymer.

38. (Original) Method of claim 37 wherein the polymer was formed during the monomer's production and/or purification processes.

39. (Original) Method of claim 37 wherein the polymer is not dissolved in the monomer stream.

40. (Original) Method of claim 34 wherein said monomers contain impurities from the monomer production and/or purification processes.

41. (Currently Amended) Method of claim ~~40~~ 34 wherein the ~~impurities include~~ mixture comprises polymer formed during the production and/or purification processes.

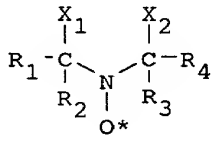
42. (Original) Method of claim 41 wherein the polymer formed during the production and/or purification processes is soluble in the monomer stream.

43. (Original) Method of claim 41 wherein the polymer formed during the production and/or purification processes is insoluble in the monomer stream.

44. (Currently Amended) A method for inhibiting the ~~premature polymerization and the~~ polymer growth of living polymer in admixture with ethylenically unsaturated monomers comprising adding to said ~~monomers~~ mixture

A) at least one first inhibitor that is a hydrogen donor or electron acceptor and

B) at least one second inhibitor having the following structural formula:



wherein

R_1 and R_4 are independently selected from the group consisting of hydrogen, alkyl, and heteroatom-substituted alkyl;

R_2 and R_3 are independently selected from the group consisting of alkyl and heteroatom-

substituted alkyl; and

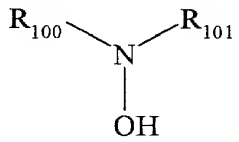
X_1 and X_2

(1) are independently selected from the group consisting of halogen, cyano, amido, -S-C_6H_5, carbonyl, alkenyl, alkyl of 1 to 15 carbon atoms, $COOR_7$, -S-COR_7, and -$OCOR_7$, wherein R_7 is alkyl or aryl, or

(2) taken together, form a ring structure with the nitrogen.

45. (Original) The method of claim 44 wherein the first inhibitor is a hydrogen donor.

46. (Original) The method of claim 45 wherein the first inhibitor is of the structure



wherein

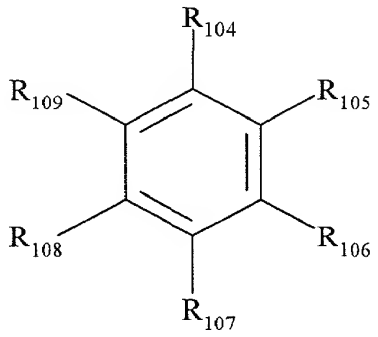
R_{100} and R_{101} are independently selected from the group consisting of hydrogen, alkyl, alkylidene, benzylidene, aryl, benzyl, COR_{102}, $COOR_{102}$, $CONR_{102}R_{103}$, cyclic, heterocyclic, and substituted alkyl or aryl where the substituents are C, O, N, S, or P, or R_{100} and R_{101} can be taken together to form a ring structure of five to seven members; and

R_{102} and R_{103} are independently selected from the group consisting of hydrogen, alkyl, aryl, benzyl, cyclic, heterocyclic, and substituted alkyl or aryl where the substituents are C,

O, N, S, or P, or R_{102} and R_{103} can be taken together to form a ring structure of five to seven members.

47. (Withdrawn)

48. (Original) The method of claim 45 wherein the first inhibitor is of the structure



wherein

R_{104}, R_{105}, R_{106}, R_{107}, R_{108}, and R_{109} are independently selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl, heterocyclic, substituted alkyl, substituted aryl, OR_{110}, $NR_{110}R_{111}$, SR_{110}, NO_2, NO, CN, COR_{112}, halogen, and/or any two adjacent groups can be taken together to form ring structure(s) of five to seven members, provided that at least one of R_{104}, R_{105}, R_{106}, R_{107}, R_{108}, and R_{109} is OH or NHR_{110};

R_{110} and R_{111} are independently selected from the group consisting of hydrogen, alkyl, aryl, benzyl, cyclic, heterocyclic, substituted alkyl or aryl where the substituents are C, O, N, S, or P, and COR_{102}, or R_{110} and R_{111} can be taken together to form a ring structure of five to seven members;

R_{112} is R_{102}, OR_{102}, or $NR_{102}R_{103}$; and

R_{102} and R_{103} are independently selected from the group consisting of hydrogen, alkyl, aryl, benzyl, cyclic, heterocyclic, and substituted alkyl or aryl where the substituents are C, O, N, S, or P, or R_{102} and R_{103} can be taken together to form a ring structure of five to seven members.

49. (Original) The method of claim 48 wherein R_{104} is OH.

50 - 51 (Withdrawn)

52. (Original) The method of claim 49 wherein at least one of R_{105} and R_{107} is NO_2.

53 - 57 (Withdrawn)

58. (Original) The method of claim 45 wherein the first inhibitor is selected from the group consisting of diethylhydroxylamine, cyclohexanoneoxime, dibenzylhydroxylamine, 2,4-dinitro-6-sec-butylphenol, N-phenyl-N'-(1,4-dimethylpentyl)-para-phenylenediamine, 2,5-di-t-

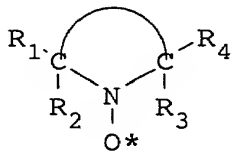
butylhydroquinone, 2,5-di-t-amylhydroquinone, methylhydroquinone, 4-t-butylhydroquinone, 4-t-butylcatechol, octanethiol, 2,6-di-t-butyl-4-ethylphenol/Cu(I)naphthenate, dihydroanthracene, N-t-butyl-2-benzothiazole-sulfenamide, and N-methyl-4-nitroaniline.

59. (Original) The method of claim 45 wherein a transition metal is added.

60. (Original) The method of claim 59 wherein the transition metal is copper.

61 - 72 (Withdrawn)

73. (Original) The method of claim 44 wherein the second inhibitor is of the structure



wherein R_1 and R_4 are independently selected from the group consisting of hydrogen, alkyl, and heteroatom-substituted alkyl and R_2 and R_3 are independently selected from the group consisting of alkyl and heteroatom-substituted alkyl, and the

portion represents the atoms necessary to form a five-, six-, or seven-membered heterocyclic

ring.

74. (Withdrawn)

75. (Original) The method of claim 73 wherein the second inhibitor contains one or more nitroxyls selected from the group consisting of:

N,N-di-*tert*-butylnitroxide;

N,N-di-*tert*-amylnitroxide;

N-*tert*-butyl-2-methyl-1-phenyl-propylnitroxide;

N-*tert*-butyl-1-diethylphosphono-2,2-dimethylpropylnitroxide;

2,2,6,6-tetramethyl-piperidinyloxy;

4-amino-2,2,6,6-tetramethyl-piperidinyloxy;

4-hydroxy-2,2,6,6-tetramethyl-piperidinyloxy;

4-oxo-2,2,6,6-tetramethyl-piperidinyloxy;

4-dimethylamino-2,2,6,6-tetramethyl-piperidinyloxy;

4-ethanoyloxy-2,2,6,6-tetramethyl-piperidinyloxy;

2,2,5,5-tetramethylpyrrolidinyloxy;

3-amino-2,2,5,5-tetramethylpyrrolidinyloxy;

2,2,4,4-tetramethyl-1-oxa-3-azacyclopentyl-3-oxy;

2,2,4,4-tetramethyl-1-oxa-3-pyrrolinyl-1-oxy-3-carboxylic acid;

2,2,3,3,5,5,6,6-octamethyl-1,4-diazacyclohexyl-1,4-dioxy;

4-bromo-2,2,6,6-tetramethyl-piperidinyloxy;

4-chloro-2,2,6,6-tetramethyl-piperidinyloxy;

4-iodo-2,2,6,6-tetramethyl-piperidinyloxy;

4-fluoro-2,2,6,6-tetramethyl-piperidinyloxy;

4-cyano-2,2,6,6-tetramethyl-piperidinyloxy;

4-carboxy-2,2,6,6-tetramethyl-piperidinyloxy;

4-carbomethoxy-2,2,6,6-tetramethyl-piperidinyloxy;

4-carbethoxy-2,2,6,6-tetramethyl-piperidinyloxy;

4-cyano-4-hydroxy-2,2,6,6-tetramethyl-piperidinyloxy;

4-methyl-2,2,6,6-tetramethyl-piperidinyloxy;

4-carbethoxy-4-hydroxy-2,2,6,6-tetramethyl-piperidinyloxy;

4-hydroxy-4-(1-hydroxypropyl)-2,2,6,6-tetramethyl-piperidinyloxy;

4-methyl-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;

4-carboxy-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;

4-carbomethoxy-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;

4-carbethoxy-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;

4-amino-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;

4-amido-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;

3,4-diketo-2,2,5,5-tetramethylpyrrolidinyloxy;

3-keto-4-oximino-2,2,5,5-tetramethylpyrrolidinyloxy;

3-keto-4-benzylidine-2,2,5,5-tetramethylpyrrolidinyloxy;

3-keto-4,4-dibromo-2,2,5,5-tetramethylpyrrolidinyloxy;

2,2,3,3,5,5-hexamethylpyrrolidinyloxy;

3-carboximido-2,2,5,5-tetramethylpyrrolidinyloxy;

3-oximino-2,2,5,5-tetramethylpyrrolidinyloxy;

3-hydroxy-2,2,5,5-tetramethylpyrrolidinyloxy;

3-cyano-3-hydroxy-2,2,5,5-tetramethylpyrrolidinyloxy;

3-carbomethoxy-3-hydroxy-2,2,5,5-tetramethylpyrrolidinyloxy;

3-carbethoxy-3-hydroxy-2,2,5,5-tetramethylpyrrolidinyloxy;

2,2,5,5-tetramethyl-3-carboxamido-2,5-dihydropyrrole-1-oxyl;

2,2,5,5-tetramethyl-3-amino-2,5-dihydropyrrole-1-oxyl;

2,2,5,5-tetramethyl-3-carbethoxy-2,5-dihydropyrrole-1-oxyl;

2,2,5,5-tetramethyl-3-cyano-2,5-dihydropyrrole-1-oxyl;

bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)succinate;

bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)adipate;

bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)sebacate;

bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)n-butylmalonate;

bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)phthalate;

bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)isophthalate;

bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)terephthalate;

bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)hexahydroterephthalate;

N,N'-bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)adipamide;

N-(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)-caprolactam;

N-(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)-dodecylsuccinimide;

2,4,6-tris-[N-butyl-N-(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)]-s-triazine; and

4,4'-ethylenebis(1-oxyl-2,2,6,6-tetramethylpiperazin-3-one).

76. (Original) Method of claim 44 wherein said monomers contain impurities from the monomer production and/or purification processes.

77. (Currently Amended) Method of claim ~~76~~ 44 wherein the ~~impurities include~~ mixture comprises polymer formed during the production and/or purification processes.

78. (Original) Method of claim 77 wherein the polymer formed during the production and/or purification processes is soluble in the monomer stream.

79. (Original) Method of claim 77 wherein the polymer formed during the production and/or purification processes is insoluble in the monomer stream.

80. (Original) Method of claim 44 wherein said monomers are undergoing purification by distillation.

81. (Original) Method of claim 80 wherein the distillation process occurs at pressures less than 760 mm Hg.

82. (Original) Method of claim 80 wherein the distillation process is a continuous process.

83. (Original) Method of claim 80 wherein the equipment in which the distillation process occurs contains polymer.

84. (Original) Method of claim 83 wherein the polymer was formed during the monomer's production and/or purification processes.

85. (Original) Method of claim 83 wherein the polymer is not dissolved in the monomer stream.

86. (Original) Method of claim 80 wherein said monomers contain impurities from the monomer production and/or purification processes.

87. (Currently Amended) Method of claim ~~86~~ 80 wherein the ~~impurities include~~ mixture comprises polymer formed during the production and/or purification processes.

88. (Original) Method of claim 87 wherein the polymer formed during the production and/or purification processes is soluble in the monomer stream.

89. (Original) Method of claim 87 wherein the polymer formed during the production and/or purification processes is insoluble in the monomer stream.

90 - 121 (Withdrawn)